9. (2 points each) Circle "TRUE" or "FALSE" for each of the following problems. Circle "TRUE" only if the statement is *always* true. No explanation is necessary.

(a) The integral $\int \arcsin(x)\ dx$ can be integrated by parts.

TRUE FALSE

(b) The graph of the equation $r = \theta$ is a straight line.

TRUE FALSE

(c) The integral

$$\int_0^{\pi/2} \frac{1}{2}\ (5\sin 2\theta)^2\ d\theta,$$

represents the area enclosed by one petal of the rose curve $r = 5\sin 2\theta$.

TRUE FALSE

(d) The area of a circular oil spill grows at a rate of $r(t)$ square miles per hour, where t is measured in hours. Then $\int_0^3 r(t)\ dt$ gives the total change (in miles) in the radius of the spill during the first three hours after it occurred.

TRUE FALSE

(e) The integral $\int_0^r \pi(r^2 - y^2)\ dy$ represents the total volume of a sphere of radius r.

TRUE FALSE